

Abstract (amended)

A surface treating method for a conductive substrate by using a photo-excitation process, wherein a conductive substrate is placed in a process chamber (1) maintained between 0.001 - 1 atmospheric pressure, while a negative bias voltage is applied to a substrate (2), ultraviolet having a photo energy of 3 - 10 eV larger than the work function of the substrate surface is applied from a ultraviolet source (5) housed in a chamber having a light output window, and a process gas is supplied into the process chamber container (1) to thereby produce ions and radicals (6) caused by the collision of process gas molecules with emitted electrons from the substrate surface and allow them to reach the surface of the substrate (2), whereby it is possible to surface-treat a substrate simply, highly efficiently, inexpensively and easily even in the case of a large-area substrate.